



Five steps to create cool „LEGO® steam engines“

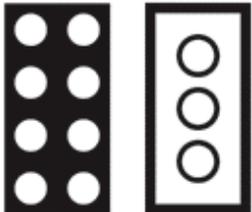


BrickFest PDX 2007

**LEGO Steam Engines
A “How-To” guideline.**

**Panel discussion on steam
locomotives held at
Brickfest PDX 2007**

**Presentation by
Reinhard “Ben” Beneke**





Five steps to create cool „LEGO® steam engines“

Who I am: Reinhard “Ben” Beneke:

- Age: 37 years, married, no children
- Location: Germany
- Online in LEGO: since late ‘96
- Favorite Themes: Town, Trains, Model Team, Designer
- LEGO® fests: in average 2 train shows per year
Zwolle/NL, 1000steine-land, PDX
- Other: Fan of SNOT-technique
Supporter of 7-wide train building
**Member of the UTB group,
which designed Set 10183**





Five steps to create cool „LEGO® steam engines“

The Task:

“How to build a well running Lego steam locomotive.”

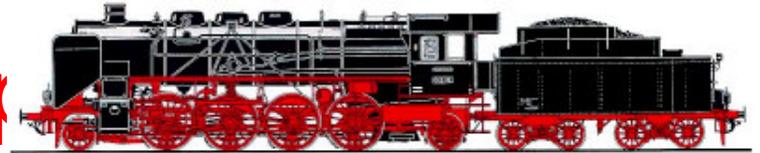
- 1) Find a fitting prototype
- 2) Choose wheel types / sizes
(aka. define the scale of the LEGO creation)
- 3) Negotiating curves
- 4) Building the main structures
- 5) Details, details, details !!!





Five steps to create cool „LEGO® steam engines“

1) Find a fitting prototype



- use internet picture galleries
=> links under Lugnet.trains newsgroup
- catalogues like Fleischmann© or Märklin©
=> these are usually available online as well
- if you know a type name, dimension drawings are often available => use Google picture
- get inspired by any engine you see in real life



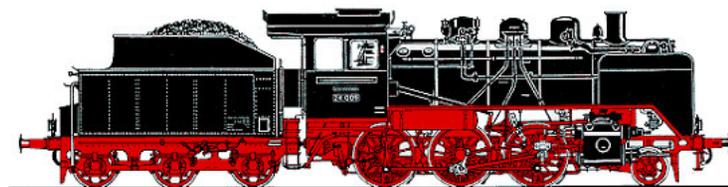


Five steps to create cool „LEGO® steam engines“

1) Find a fitting prototype



- keep in mind that you want to model the engine in LEGO bricks
 - => look for clear color schemes and shapes
- people love what they can recognize.
 - => you may prefer local livres and famous types
- avoid to build engines, which have already been built in 100% perfect manner: you can't beat that

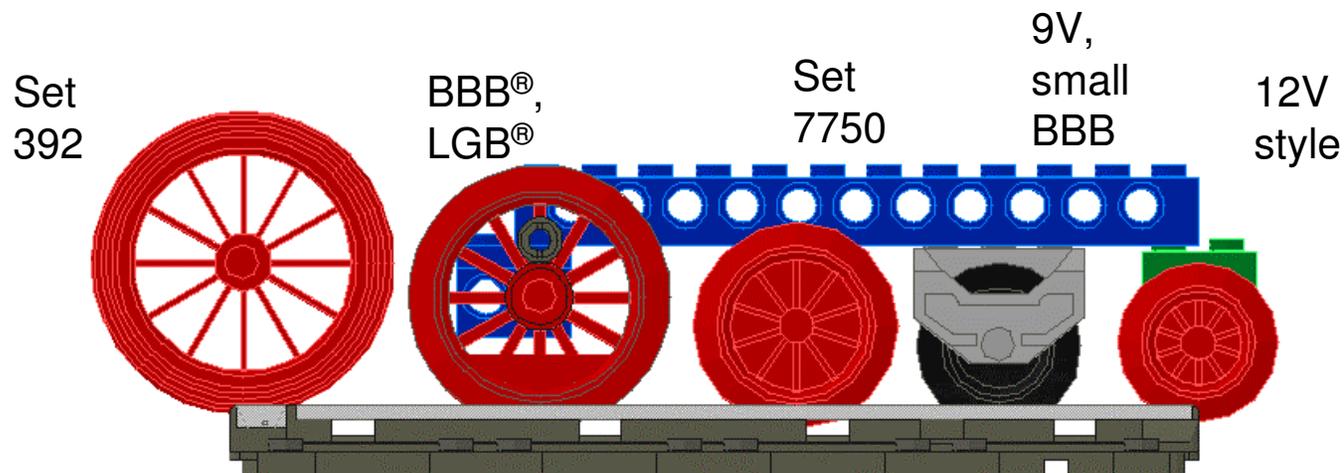


Five steps to create cool „LEGO® steam engines“

2) Choose the wheel types

(aka. define the scale of the LEGO creation)

- LEGO offers only a small variety of wheels:



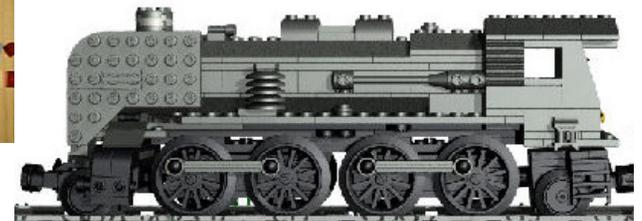
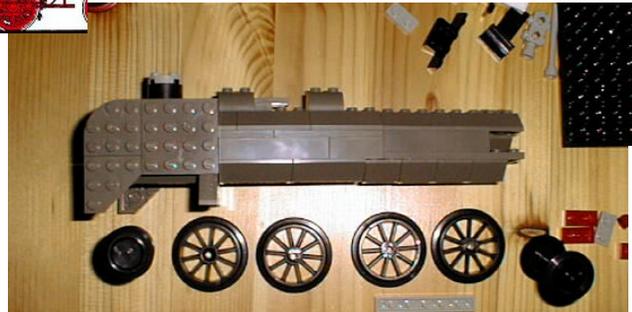
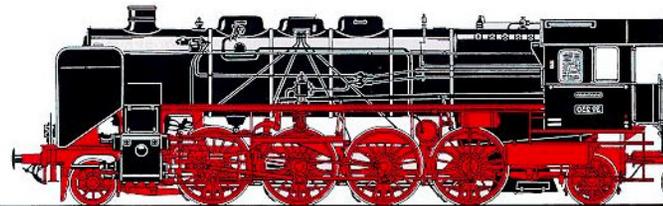
+ turntable top, technic hub and other „blind“ wheels.



Five steps to create cool „LEGO® steam engines“

2) define the scale of the LEGO creation

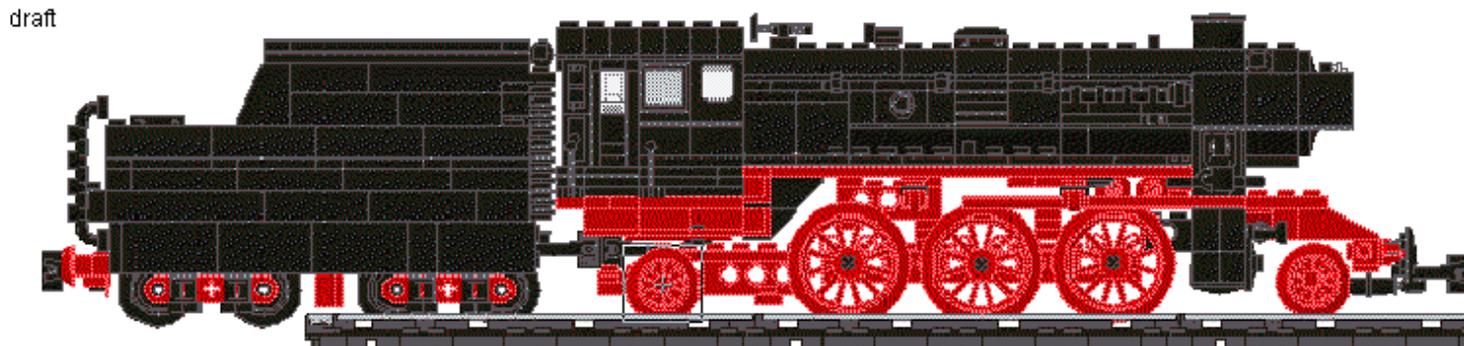
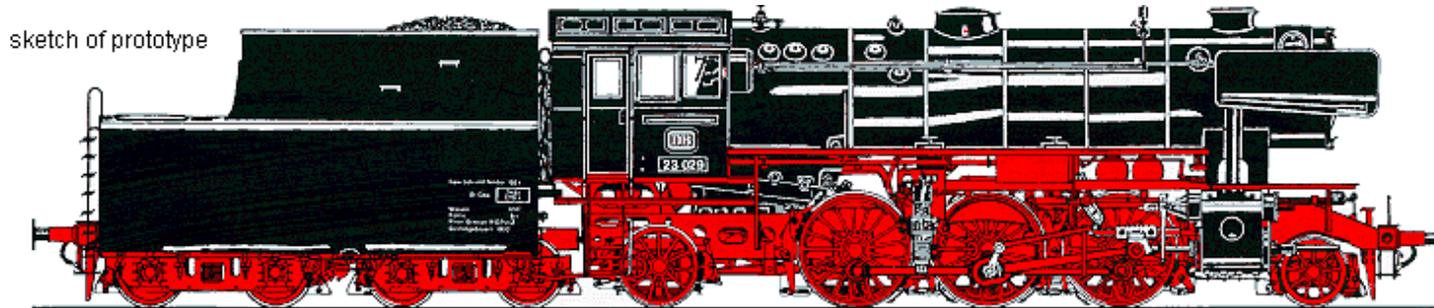
- once a wheel is chosen, the rest is defined:





Five steps to create cool „LEGO® steam engines“

2) define the scale of the LEGO creation

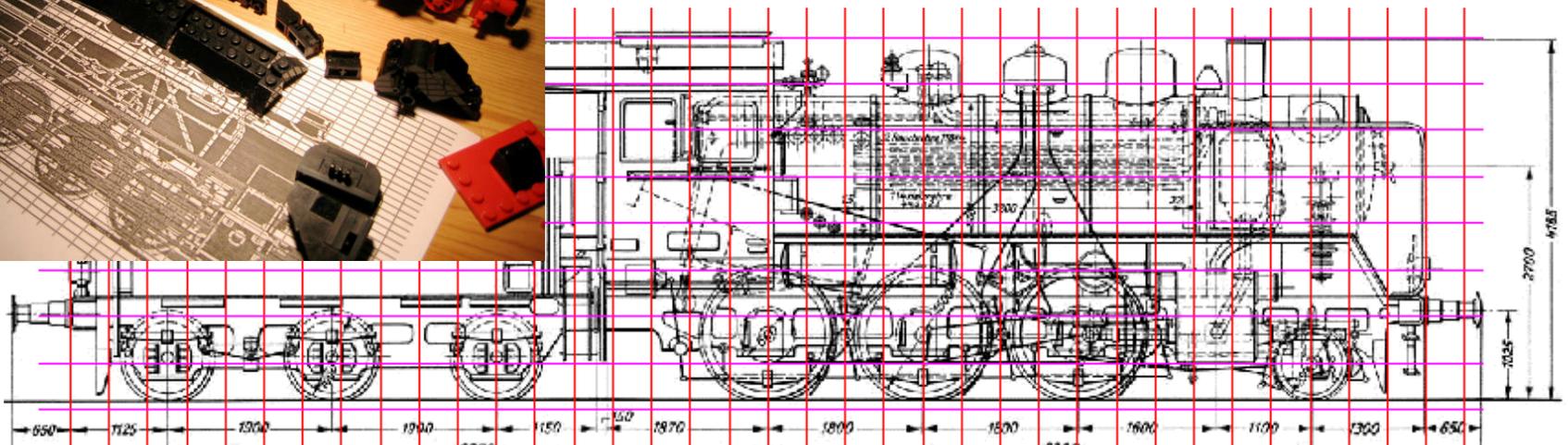
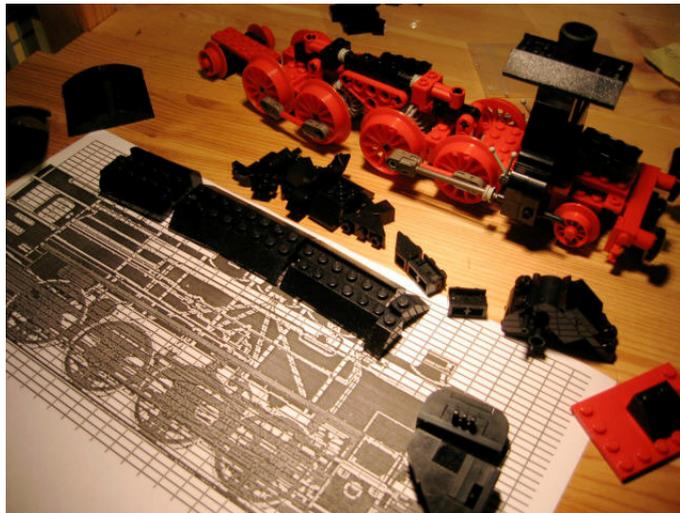




Five steps to create cool „LEGO® steam engines“

2) define the scale of the LEGO creation

- a grid may help to scale the engine quite precise
- + keep wheel distances correct!

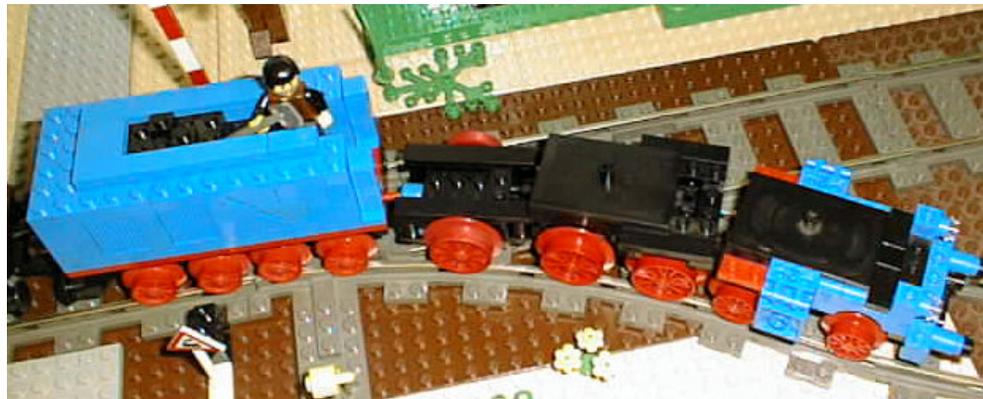




Five steps to create cool „LEGO® steam engines“

3) Negotiating curves - the biggest challenge!

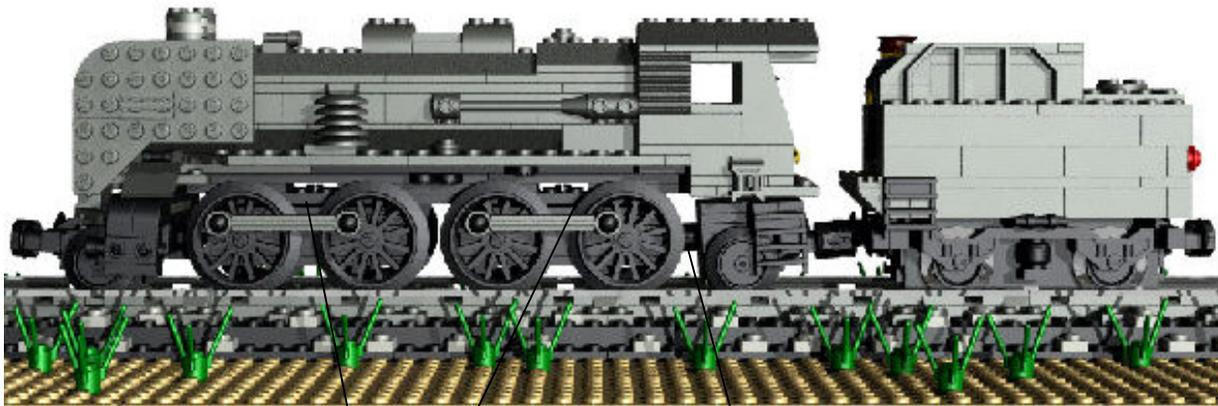
- curved LEGO track has a very small curve radius
- ideas can only rarely be overtaken from prototypes or model railroader's solutions
- typical LEGO solutions are subgroups
=> subgroups are contrary to connecting rods.



BrickFest PDX 2007 is a production of
BrickEvents LLC, all rights reserved.

Five steps to create cool „LEGO® steam engines“

3) negotiating curves - examples



Subassemblies with ball + socket joints

2 bogies (each with a subassembly of an extra pair of wheels)

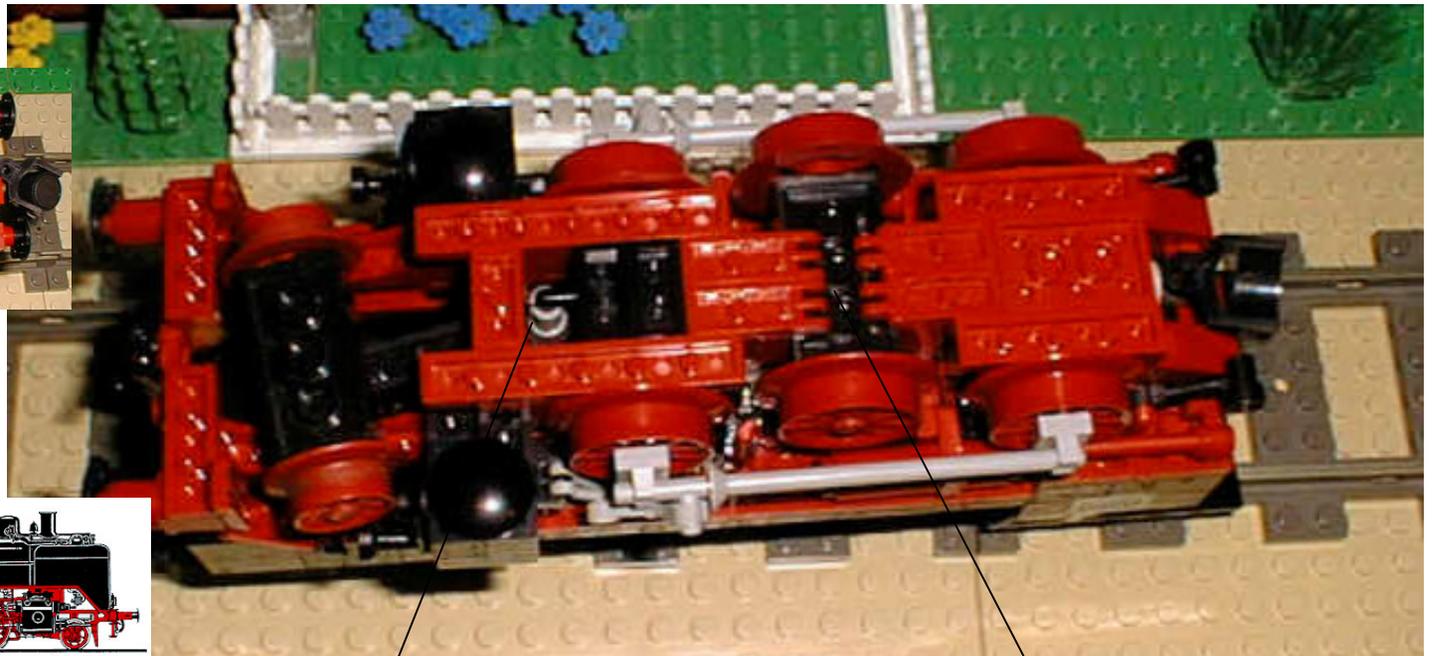


Five steps to create cool „LEGO® steam engines“

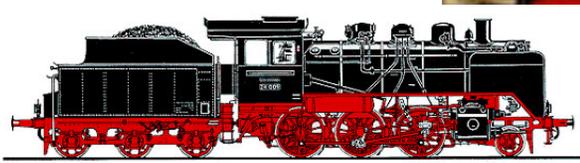
3) negotiating curves - examples



center axle slides



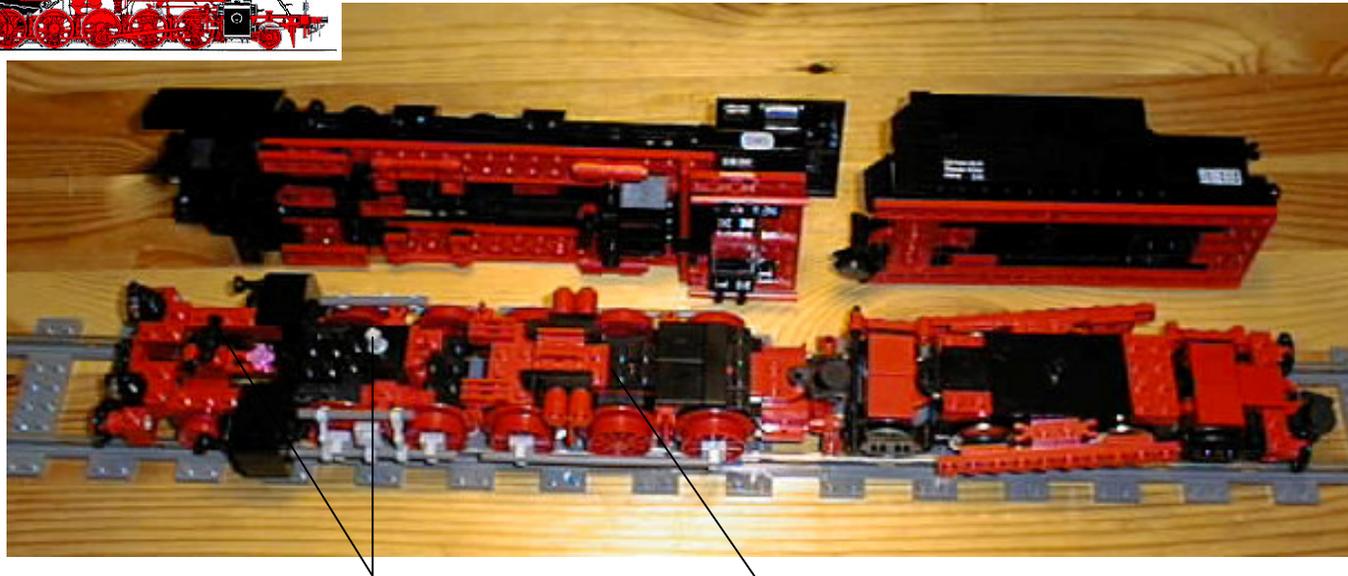
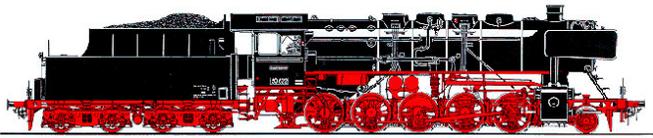
Steering point of running wheel // center driver axle slides





Five steps to create cool „LEGO® steam engines“

3) negotiating curves - examples



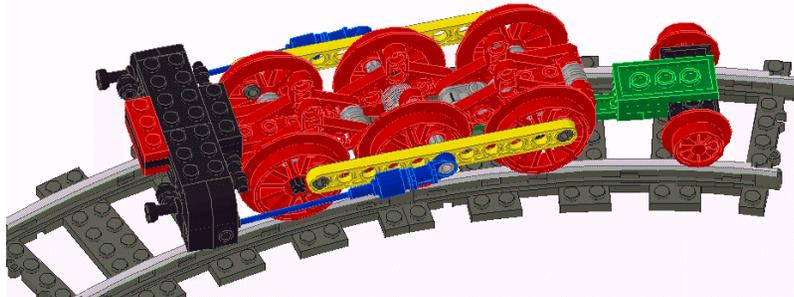
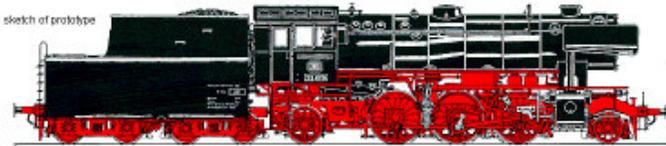
running wheel + 2 pair of drivers // triple with sliding center axle



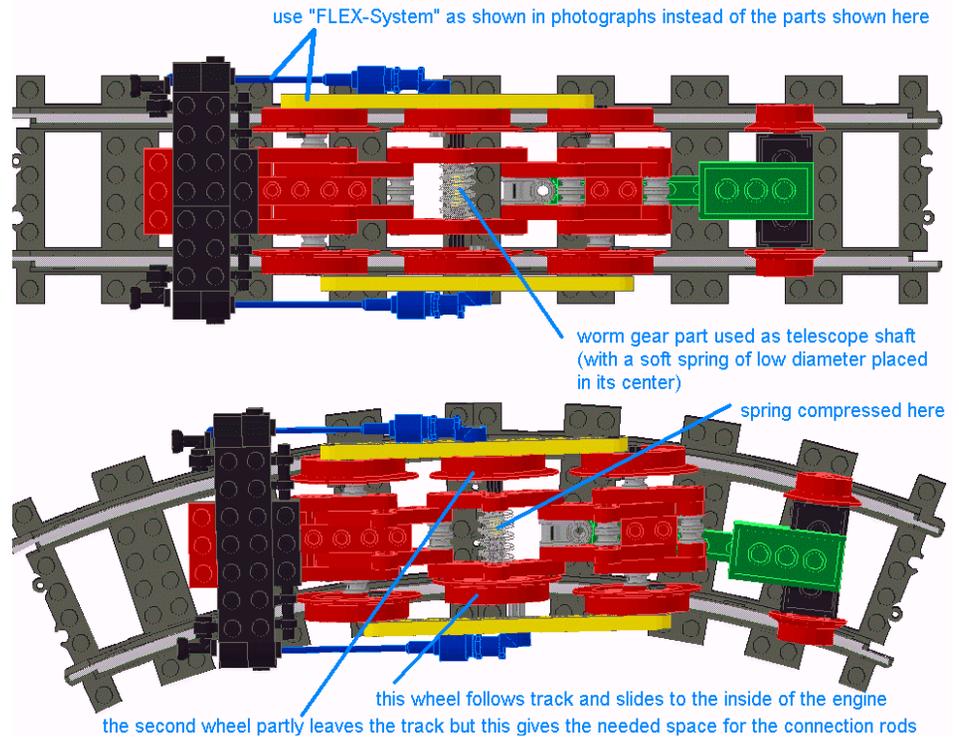


Five steps to create cool „LEGO® steam engines“

3) negotiating curves - examples



triple with center wheels sliding only to inside





Five steps to create cool „LEGO® steam engines“

3) negotiating curves - other examples



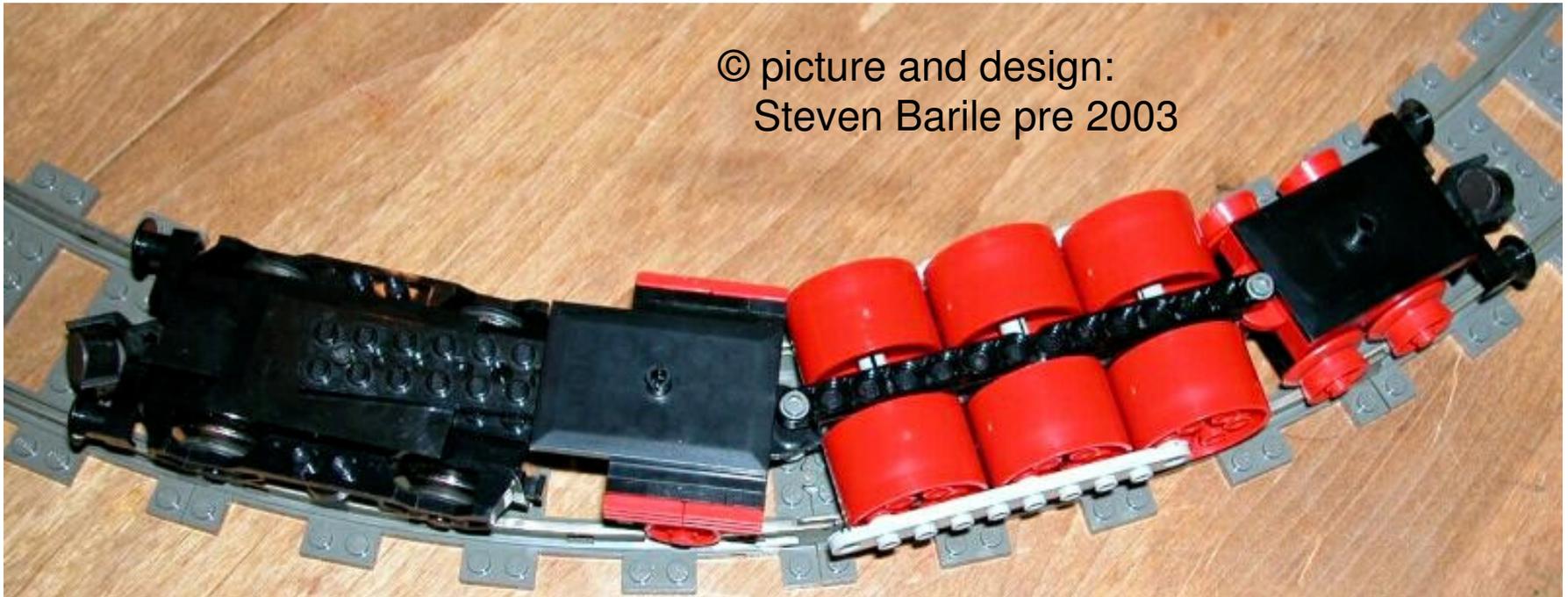
© picture and design:
Anthony Sava 2007

use a mix of blind drivers and wheels
with flange



Five steps to create cool „LEGO® steam engines“

3) negotiating curves - other examples



© picture and design:
Steven Barile pre 2003

a mix of train wheels and „blind drivers“



Five steps to create cool „LEGO® steam engines“

4) Building the main structures (this is pure fun!)

- just build a “solid” structure following your own style!
- choose the dia. of the boiler and build a cab and a tender



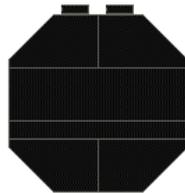


Five steps to create cool „LEGO® steam engines“

4) building + having fun!

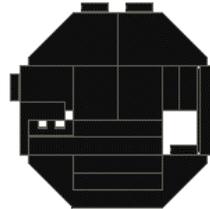
– let your creativity explode + get complicated

"regular" boiler
(like 7750 type)



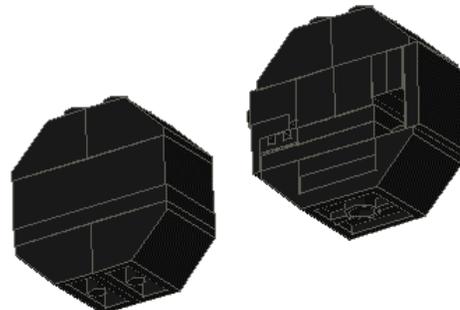
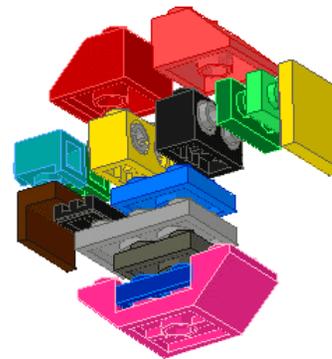
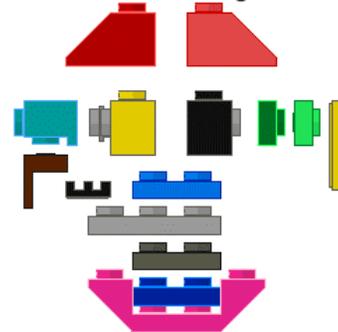
height = 10 plates
dia = 10 plates

boiler of BR39 MOC
121% volume



height = 11 plates
dia = 11 plates

how to build enlarged boiler





Five steps to create cool „LEGO® steam engines“

5) Details, Details, Details!

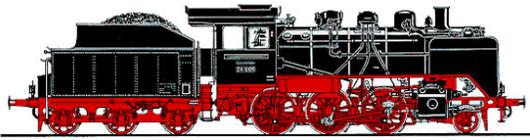
- details are never too small to remain unconsidered!
- exaggerate minor details to a cartoonish style
- stickers can add more realism
- are there no smaller elements than minifig hands?



BrickFest PDX 2007 is a production of BrickEvents LLC, all rights reserved.

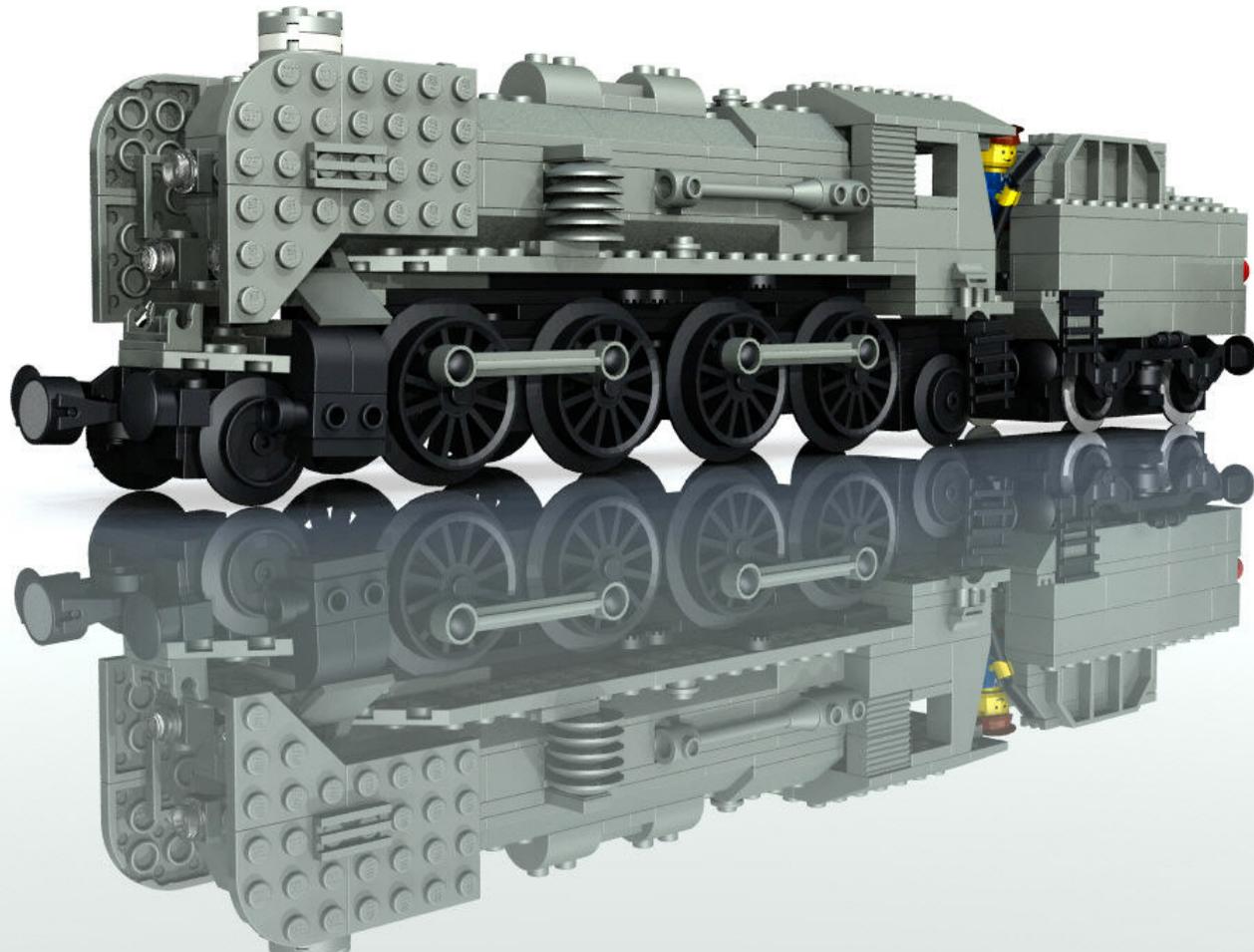


Five steps to create cool „LEGO® steam engines“



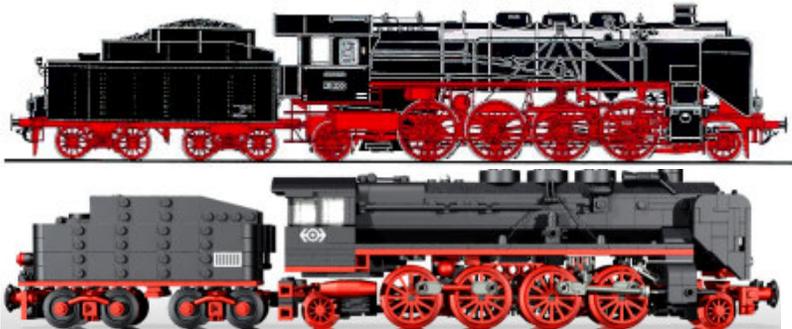


Five steps to create cool „LEGO® steam engines“



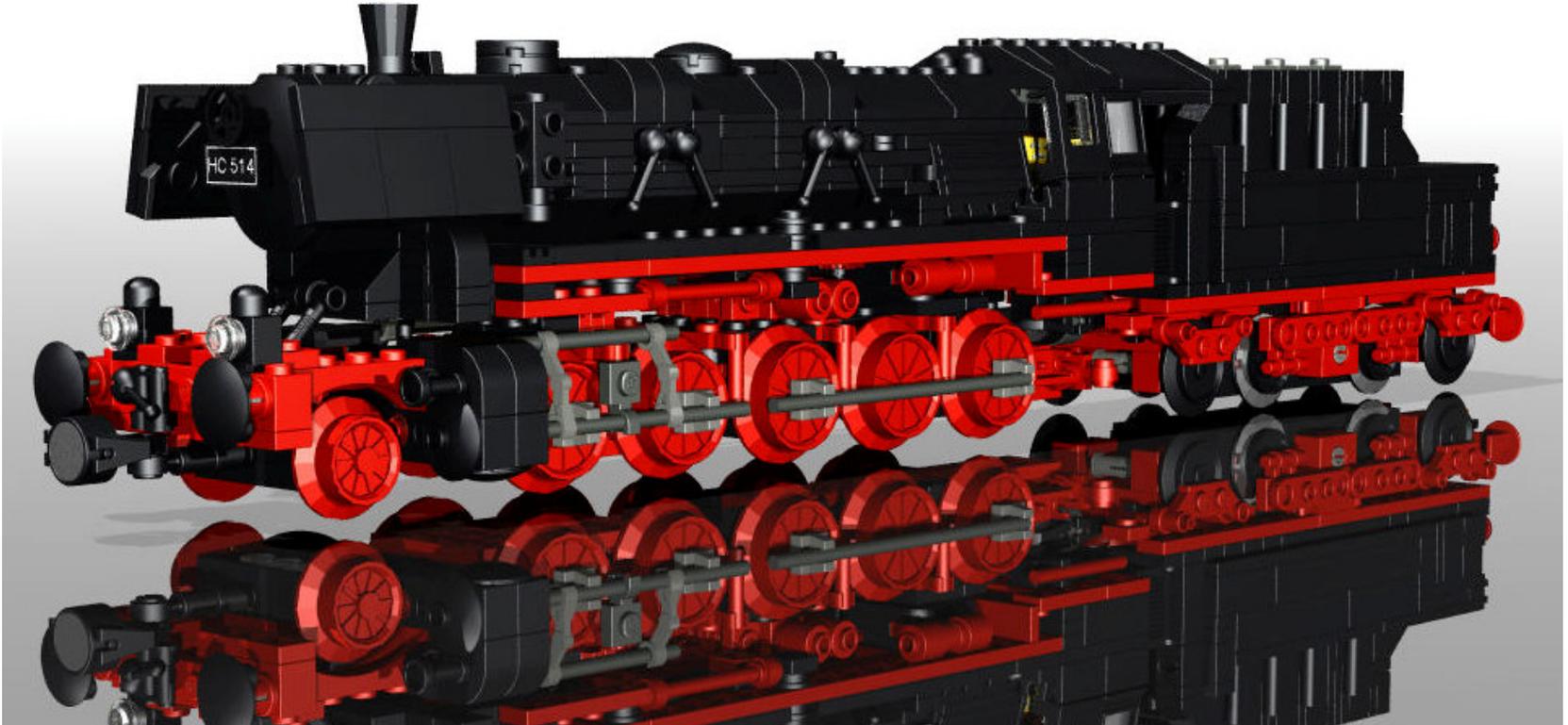
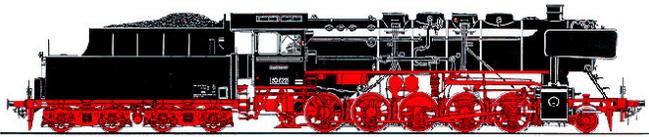


Five steps to create cool „LEGO® steam engines“





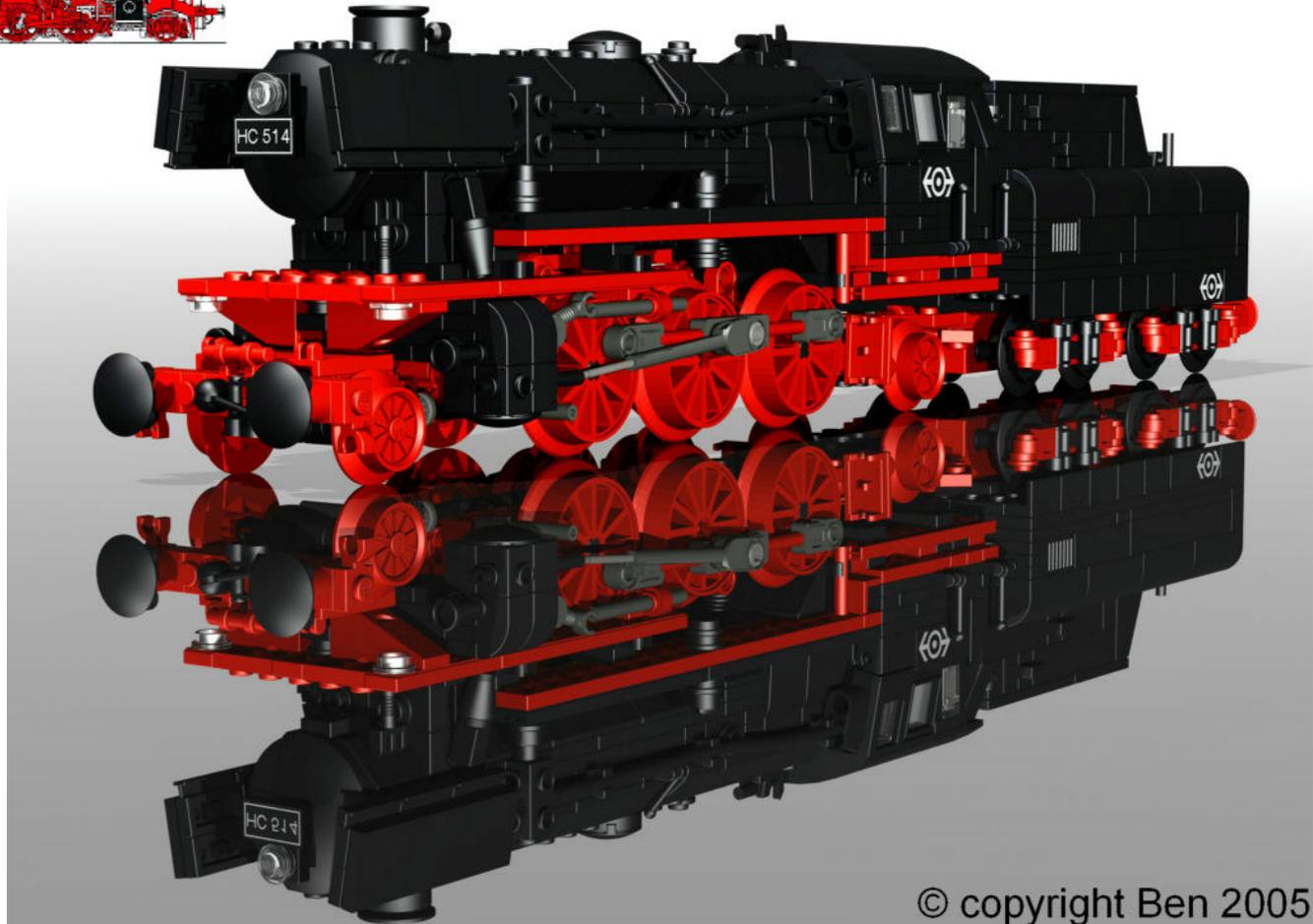
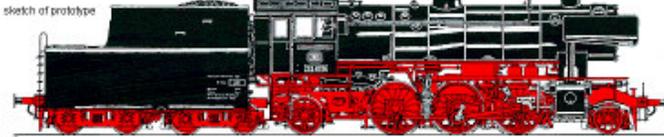
Five steps to create cool „LEGO® steam engines“



BrickFest PDX 2007 is a production of
BrickEvents LLC, all rights reserved.



Five steps to create cool „LEGO® steam engines“



© copyright Ben 2005

Thanks for your interest in my presentation!

Now there is still time to:

- ask questions
- look “inside” of some of the presented MOCs
- have a discussion on any topic



contact: Ben@1000steine.com